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Science and Sociability

Women as Audience at the British Association for the Advancement of Science, 1831–1901

By Rebekah Higgitt and Charles W. J. Withers***

ABSTRACT

This essay recovers the experiences of women at the meetings of the British Association for the Advancement of Science (BAAS) from its founding in 1831 to the end of the Victorian era. It aims to add to research on women in science by reconsidering the traditional role of women as consumers rather than producers of knowledge and to that on science popularization by focusing on audience experience rather than on the aims and strategies of popularizers. The essay argues that, in various ways, the ubiquitous and visible female audience came to define the BAAS audience and “the public” for science more generally. The women who swelled the BAAS audiences were accepted as a social element within the meetings even as they were regarded critically as scientific participants. Portrayed as passive and nonscientific, women allowed the male scientific elites to distance themselves from their audiences. Arguing from diary and other evidence, we present examples that complicate existing notions of audiences for science as necessarily active.

HISTORIANS OF NINETEENTH-CENTURY SCIENCE have become familiar with the “Gentlemen of Science” of the early years of the British Association for the Advancement of Science (BAAS). Despite the attention that the association’s history has received, little consideration has been given to the experiences of the large audiences that

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Janet Browne raised a number of the issues discussed here in a conference paper and kindly made her results available to us. Her paper was circulated in the typescript proceedings of “Science and British Culture in the 1830s,” Trinity College, Cambridge, July 1994. We also thank Jack Morrell, Diarmid Finnegan, Browne, and the three anonymous referees for *Isis* for their comments on earlier versions of this essay. For permission to quote from material in their care, we are grateful to the Bodleian Library and the British Association for the Advancement of Science. The research on which this essay is based was undertaken with the support of the ESRC (Research Grant RES-000-23-0927) and, facilitating access to BAAS sources in overseas archives, the British Academy (Research Grant SG-44762); we acknowledge this support with thanks.

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attended its annual meetings.¹ Notwithstanding interest in popularization and popularizers and the points raised by Roger Cooter, Stephen Pumfrey, and Steven Shapin more than a decade ago, the intrinsic difficulties associated with uncovering audience experience mean that this has rarely been probed in studies of scientific institutions and media.² In considering the BAAS and its audiences in the period 1831–1901, this essay seeks to enlarge our understanding of the association’s meaning and place in nineteenth-century civil society, in contrast to what we know of the messages its leading male figures aimed to impart.

By concentrating on women within BAAS audiences, we also aim to contribute to work on women and science. While historians have done much to highlight the successes of and the difficulties faced by women who sought to add to or popularize scientific knowledge, little consideration has been given to women as consumers of that knowledge.³ Women were a prominent part of BAAS audiences, and their presence was subject to considerable comment. We examine such commentary in periodicals and newspapers, as well as remarks produced by women themselves in diaries, letters, and reminiscences.⁴ The individuals considered here were from a variety of backgrounds, but none presented a paper at a BAAS meeting. Together these sources reveal much about the presence and the intentions of women in a “scientific” setting. Later in this essay we will consider whether these women represented BAAS audiences more widely—after all, many male attendees were neither trained in nor practitioners of science—but we can with confidence identify them as a distinct category that highlighted the problem of how the BAAS catered to specialist and general audiences. The article thus also explores why the female audience

¹ Jack Morrell and Arnold Thackray, *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford: Clarendon, 1981) (hereafter cited as **Morrell and Thackray, *Gentlemen of Science***). The association was founded in 1831. Janet Browne, “A Glimpse of Petticoats: Women in the Early Years of the British Association for the Advancement of Science,” in “Science and British Culture in the 1830s” (Conference Proceedings, Trinity College, Cambridge, 1994), considers women as audience as well as speakers up to ca. 1860. Philip Lowe, “The British Association and the Provincial Public,” in *The Parliament of Science: The British Association for the Advancement of Science, 1831–1981*, ed. Roy MacLeod and Peter Collins (Northwood, Middlesex: Science Reviews, 1981), pp. 118–144, concentrates on the formal policy and reception of the association without considering audience responses. Considerations of the BAAS usually concentrate on the interests of its leading elite. See, e.g., James A. Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago/London: Univ. Chicago Press, 2000), pp. 406–435; or Frank Turner, “Public Science in Britain, 1880–1919,” *Isis*, 1980, 71:589–608.

² Roger Cooter and Stephen Pumfrey, “Separate Spheres and Public Places: Reflections on the History of Science Popularization and Science in Popular Culture,” *History of Science*, 1994, 32:237–267; and Steven Shapin, “Science and the Public,” in *Companion to the History of Modern Science*, ed. R. Olby, J. R. R. Christie, and M. J. S. Hodge (London/New York: Routledge, 1996), pp. 990–1007.

³ This focus is epitomized by biographical dictionaries of women in science. See also Margaret Rossiter, *Women Scientists in America: Struggles and Strategies to 1940* (Baltimore: Johns Hopkins Univ. Press, 1982); Sally Gregory Kohlstedt, ed., *History of Women in the Sciences: Readings from Isis* (Chicago/London: Univ. Chicago Press, 1999); Pnina G. Abir-Am and Dorinda Outram, eds., *Uneasy Careers and Intimate Lives: Women in Science, 1789–1979* (New Brunswick, N.J./London: Rutgers Univ. Press, 1987); and Barbara T. Gates, *Kindred Nature: Victorian and Edwardian Women Embrace the Living World* (Chicago/London: Univ. Chicago Press, 1998). There has been recent interest in women as popularizers of science. See, e.g., Gates and Ann B. Shteir, eds., *Natural Eloquence: Women Reinscribe Science* (Madison/London: Univ. Wisconsin Press, 1997); Shteir, “Elegant Recreations? Configuring Science Writing for Women,” in *Victorian Science in Context*, ed. Bernard Lightman (Chicago/London: Univ. Chicago Press, 1997), pp. 236–255; and Suzanne Le-May Sheffield, *Revealing New Worlds: Three Victorian Women Naturalists* (London/New York: Routledge, 2001).

⁴ We have looked at newspaper reports from the *Scotsman* Online Archive (<http://archive.scotsman.com/>), the *Times* Digital Archive (www.gale.com/Times/), and the British Library Newspaper Library, as well as press-cuttings from the BAAS Archives (Bodleian Library, Oxford) and those kept by local organizers of the meetings.

was accepted, even welcomed, at BAAS meetings and how it helped define both “science” and “the public.”

Our attention to the presence of women at BAAS meetings has, we suggest, wider significance. It may help address the gaps in current literature on women and science and on science and the public. Because women have too often been written out of science’s history, one task facing feminist historians has been to seek out forgotten and neglected contributors. There has been, perhaps, some disinclination to consider those women who were only “consumers” of science. By focusing on those who did not pursue scientific research or education, this study helps to demonstrate the atypicality of those who did, as well as the ubiquity of the entrenched conventions that they challenged. Work on audiences, meanwhile, has highlighted the active appropriation of science by nonelite groups. Men of science are no longer “considered as insulated” from “diffuse, undifferentiated and passive” audiences, but we have been told little of collective or individual responses. Shapin circumscribed the issue by stating that “consideration of the audience for science is pointless if it cannot be shown that the audience is active rather than passive, influential rather than submissive.”⁵ Having accepted these points, however, we must also allow that audiences, male and female, could indeed be uninterested in or bored by the scientific content of lectures and that they would have seen their role, at least within the lecture hall, as passive. Even so, such “passivity” needs careful qualification. “Outsiders” attended events such as the BAAS meetings, and the organizers tolerated or encouraged the involvement of people, many of them women, who did not actively participate in science beyond the week-long meetings. Paradoxically, it may have been the apparent passivity of such audiences that allowed them actively to influence the meaning of the BAAS and the impact of its mission to promote science in the public realm.

It is, however, notoriously difficult to acquire a detailed understanding of audience or reader responses. This is undoubtedly why the intentions of authors or speakers and the content of their published writings have been much more commonly considered by historians. As well as the question of the survival of suitable evidence, there is the matter of whether we can view particular instances as representative of a larger picture. As Kate Flint has noted in studying women readers, “It is astonishing how few respectable conceptual tools we have for dealing with [the] self-evident fact” that “*people are different from each other.*” In generalizing from evidence found in diaries and letters, Jim Secord has taken comfort from the methodologies of histories of medicine written from the patients’ point of view and empirical studies of television audiences, concluding that if we are to understand the role of individual agency or engagement with popular media, “the limited and partial evidence of the situated case . . . remains vital even when audiences number in the millions.”⁶ Certainly when we have sources such as diaries we should neither ignore them nor treat them in isolation. Diary and letter writing have their own

⁵ Cooter and Pumfrey, “Separate Spheres and Public Places” (cit. n. 2), p. 241; Richard Whitley, “Knowledge Producers and Knowledge Acquirers: Popularisation as a Relation between Scientific Fields and Their Publics,” in *Expository Science: Forms and Functions of Popularisation*, ed. Terry Shinn and Whitley (Dordrecht/Boston: Reidel, 1985), pp. 3–28, on p. 4; and Steven Shapin, “The Audience for Science in Eighteenth Century Edinburgh,” *Hist. Sci.*, 1974, 12:95–121, on p. 96. On audiences for science see also Roger Cooter, *The Cultural Meaning of Popular Science: Phrenology and the Organization of Consent in Nineteenth-Century Britain* (Cambridge: Cambridge Univ. Press, 1984); and Anne Secord, “Science in the Pub: Artisan Botanists in Early Nineteenth-Century Lancashire,” *Hist. Sci.*, 1994, 32:269–315.

⁶ Kate Flint, *The Woman Reader, 1837–1914* (Oxford: Clarendon, 1993), p. 326 (the axiom in italics is quoted from Eve Kosofsky Sedgwick, *Epistemology of the Closet* [London: Harvester Wheatsheaf, 1991]); and J. Secord, *Victorian Sensation* (cit. n. 1), p. 519.

histories and epistolary conventions, which should be attended to as we consider such writings as evidence and in relation to other published and unpublished sources.⁷

The evidence examined here, showing how women viewed and reported on their own experiences at BAAS meetings, is diverse in terms of the dates of the authors' attendance, their reasons for going, and their personal backgrounds. We might expect that women would write about the BAAS in their diaries: several hundred women had tickets to each of the peripatetic annual meetings, and many more would have been affected by the association as it came to town. Diary writing became increasingly common during the nineteenth century as a mode of writing that, if not essentially feminine, was certainly accessible to and even encouraged for women.⁸ Given the improbable survival of the archives of those who were neither well known themselves nor connected to those who were well known, it is not surprising that the majority of the women considered here were either aristocratic or related to important figures in the BAAS. In contrast to the "sources" examined in other studies, however, a number of the women considered here have hitherto been unknown to historians—we are thus able to reflect on the experiences of women such as Agnes M. Hudson and Margaret Smith, together with the better-known Caroline Fox, Clara Strutt (Lady Rayleigh), and Emily Poulton.⁹

A note on the texts themselves is pertinent. First, levels of privacy cannot be presumed equal. It is likely that some journals were kept with a view to sharing the account, or at least to aid memory when later reporting the event to others. There is in any case a blurring of genres in such writing, as demonstrated by "letter-diaries," in which events were recorded under dated daily entries and subsequently posted to a correspondent. Despite, or

⁷ Diary writing has received attention in literary studies, particularly from feminists. See Rachel Langford and Russell West, eds., *Marginal Voices, Marginal Forms: Diaries in European Literature and History* (Amsterdam/Atlanta, Ga.: Rodopi, 1999); and Harriet Blodgett, *Centuries of Female Days: Englishwomen's Private Diaries* (New Brunswick, N.J.: Rutgers Univ. Press, 1988). See also Robert Fothergill, *Private Chronicles: A Study of English Diaries* (London/New York: Oxford Univ. Press, 1974); and Sharyn Lowenstein, "A Brief History of Journal Keeping," in *The Journal Book*, ed. Toby Fulwiler (Portsmouth, N.H.: Boynton/Cook, 1987), pp. 87–97. On epistolarity see Rebecca Earle, ed., *Epistolary Selves: Letters and Letter-Writers, 1600–1945* (Aldershot: Ashgate, 1999); and David Barton and Nigel Hall, eds., *Letter Writing as a Social Practice* (Amsterdam/Philadelphia: Benjamins, 2000).

⁸ In responding to the emphasis by feminists interested in the history of diary writing, Harriet Blodgett suggests only that "diary keeping has been practiced so extensively by women because it has been possible for them and gratifying to them": Blodgett, *Centuries of Female Days*, p. 5.

⁹ We know so little about Agnes M. Hudson that it is not even clear whether she is the author of the journal in question. The name appears at the front, but the handwriting is not a clear match: Diary, probably by Agnes M. Hudson, of her attendance at British Association Meetings in Bristol and Sheffield . . . , 1875–1878, MS Eng.e.3386, Bodleian Library. Margaret Smith (1867–1904) described the 1901 meeting in Glasgow in a series of letters to her mother: Letters of Margaret Smith to Susan Emma Smith, Records of Archibald Smith, TD 1/967, Mitchell Library, Glasgow. Her father, Archibald Smith (1813–1872), had been a barrister and mathematician, and Lord Kelvin was a family friend, but Margaret is certainly an obscure figure. The diary of Caroline Fox, daughter of Robert Were Fox, is well known for its anecdotes of literary and scientific celebrities: *Memories of Old Friends, being Extracts from the Journals and Letters of Caroline Fox*, ed. Horace N. Pym (London: Smith, Elder, 1882) (hereafter cited as **Fox, *Memories of Old Friends***). Caroline Fox attended BAAS meetings at least in 1836, 1837, 1852, and 1857. Clara Strutt (b. ca. 1825), mother of the physicist and BAAS president John Strutt, Lord Rayleigh (1842–1919), accompanied him to the 1884 BAAS meeting in Montreal. Her letter-diary of the trip, addressed to her mother, was privately published as *The British Association's Visit to Montreal, 1884: Letters* (Project Gutenberg—<http://www.gutenberg.org/etext/6876>) (hereafter cited as **Strutt, *British Association's Visit to Montreal, 1884***). Emily Poulton (d. 1939) was married to Edward Bagnall Poulton (1856–1943), an entomologist who took a prominent role in Section D and was president of the BAAS in 1937. She accompanied him to three of the BAAS's overseas meetings: Toronto (1897), South Africa (1905), and Australia (1914), recording her experiences in Diary of Emily Poulton, MSS Eng.e.2015 and 2023, Bodleian Library. Unless otherwise indicated, biographical information is taken from the *Oxford Dictionary of National Biography* (www.oxforddnb.com) or relevant archival catalogues.

perhaps because of, the possibility that they might be shared or even published, the diaries exhibit little self-reflection.¹⁰ A number of the diaries considered here were kept especially to record the writer's visit to the BAAS meeting and so act as memoranda or souvenirs of the event, corresponding to the publicly available newspaper reports and the handbooks produced for the meetings from the 1870s. We must be careful, therefore, about assuming that such writings reveal the authors' "real" thoughts and feelings. They do, however, report actual events and the observable behavior of middle- and upper-class women both in the public settings of the BAAS meetings and in the more private spaces of homes, breakfast parties, and rented lodgings.

This essay first provides an outline of the history of the presence of female audience members at British Association meetings, highlighting the spaces where they were welcomed and those where they were only more grudgingly accepted. We then discuss the depiction of women at BAAS meetings in the reports of newspapers and periodicals. Here we highlight commonly recurring themes in such representations of women and comment on the fact that this portion of the audience came in many ways to represent the BAAS "public" as a whole. The final section examines the experiences of women as recorded by some who were present at one or more of the annual meetings. These accounts help challenge the stereotypical depictions that appeared in newspapers, but in many ways they confirm that women conformed to expected behavioral patterns. The examples examined here frequently highlight the authors' lack of scientific knowledge, their interest in the social side of the gatherings, and their supportive role toward male family members, acquaintances, and speakers and, by extension, toward public science. These features, we suggest, are representative of the concerns of the majority of women who attended BAAS meetings, throwing into relief the extraordinary achievements of those who did defy convention by carrying out scientific research, teaching, and writing.

THE BRITISH ASSOCIATION AND FEMALE AUDIENCES

The presence of women at BAAS meetings raised fundamental questions about whom and what the association was for. Few women delivered scientific papers, and, until well into the twentieth century, they were unlikely to have had a scientific education. Jack Morrell and Arnold Thackray's classic treatment of the association's early years has described the debates over whether to admit women to the meetings and the extent to which they could participate.¹¹ Women were present, almost accidentally, at the first meeting in York, accompanying visiting men of science and being involved in efforts to provide a suitably hospitable welcome for the temporary residents. The peripatetic nature of the BAAS meant that its meetings were considered as social occasions and showcases for the host locality as well as for the transaction of scientific business. Whatever the assumptions of the association's founding members regarding women, it is evident that a trip to York in 1831 was a journey of sufficient length and significance to make bringing wives and daughters a pleasant idea, both to keep the men company and for their own entertainment.

¹⁰ It is generally thought that throughout the nineteenth and early twentieth centuries diary writers became increasingly conscious of themselves as individuals and as writers (see Fothergill, *Private Chronicles* [cit. n. 7], pp. 32–33), but scholars have consistently overemphasized the more introspective, literary, and rewarding texts.

¹¹ Morrell and Thackray, *Gentlemen of Science*, pp. 148–157. See also Browne, "Glimpse of Petticoats" (cit. n. 1). Patricia Phillips's rather impressionistic *The Scientific Lady: A Social History of Women's Scientific Interests, 1520–1918* (London: Weidenfeld & Nicolson, 1990), pp. 200–203, looks at female audiences at the BAAS but highlights the minority who had active scientific interests and overplays their involvement.



Figure 1. Ticket for the first BAAS meeting in York, 1831. (Permission from Yorkshire Philosophical Society.)

The ticket for this first meeting even showed two women enjoying the meeting's location in the grounds and buildings of York's new museum (see Figure 1).

The attendance of women at dinners and conversaciones was never questioned, although many commentators queried the emphasis on such events at a scientific meeting. The real question was whether women could and should partake of the scientific fare, particularly when the BAAS met in the masculine settings of Oxford and Cambridge, as it did in 1832 and 1833. For William Buckland, writing in 1832, "Everybody whom I spoke to on the subject agreed that if the Meeting is to be of scientific utility, ladies ought not to attend the reading of the papers . . . as it would overturn the thing into a sort of Albemarle dilettanti meeting instead of a serious philosophical union of working men." He added, however, that "their presence at private parties is quite another thing—and at these I think the more ladies there are, the better." Charles Babbage believed that the presence of women, under certain conditions, would benefit the association:

Ladies ought to be admitted at some kind of assembly: remember the dark eyes and fair faces you saw at York and pray remember that we absent philosophers sigh over the eloquent descriptions we have heard of their enchanting smiles. It is of more importance than perhaps you may imagine to enlist the ladies in our cause and the male residents throughout the country will attend in greater numbers if their wives and daughters partake some share of the pleasure. If you will only get up an evening conversazione for them at Oxford I will try and start a ball for them at Cambridge.

Women are presented here as decorous creatures eager for novelty and diversion. Babbage believed that their participation—in suitable contexts—would encourage (male) attendance, but John Robison worried that in York "many persons applied for admission with no other view than to obtain a cheap week's amusement for the females of the family."

He suggested that Ladies' Tickets should be provided only via men who had paid for permanent membership in the association or contributed to the local fund. This would mean that "no one will be able to boast that they and their female friends have eaten more in refreshments than the price of their ticket would have purchased." In addition, "with such checks as these the influx of ladies would not occasion either embarrassment or discontent, and the company would be more select, than I regret to say it was here."¹²

Initially, women were not allowed into the business part of the meetings, including the sectional meetings, organized according to discipline, at which papers were read. Roderick Murchison's statement in 1839 that it was the "evening meetings and the various exhibitions" that "will be the chief attraction for the ladies" defined the approved female sphere and reflected a generally shared assumption. There was, however, some anxiety that women might not know their place or would flout convention. John Phillips thought it essential to "distinguish between evenings of business and lecture evenings on which ladies may properly and with pleasure attend and be instructed as well as amused." In the event he was more flexible, telling his sister "*You must attend the Meeting*; for it ought to be superb, but I fear you may hardly get to the Sections. If anyone else does, you shall *also*."¹³ Women did indeed enter the sections, even when nominally barred, and the consequence of this irregular situation was that in 1837 they were formally allowed into Sections C and D, which included the popular, and suitably ladylike, subjects of geology and botany.¹⁴ As president of Section C, Adam Sedgwick, who reportedly "smited the hearts of all the ladies of whom we had 300 daily in our gallery," noted their presence with chivalrous condescension in his address. In 1838 women were formally admitted into all sections except D, for in addition to botany this section included zoology, which some anticipated might generate discussions unsuitable for feminine ears. A common concern was that the presence of women "limited the range of subjects and greatly checked discussion." By 1839, however, this fear had apparently abated sufficiently for women to be allowed into all sectional meetings, provided they had "access to the galleries only or railed-off spaces."¹⁵

¹² William Buckland to Roderick Murchison, 27 Mar. 1832, 5 Apr. 1832, in Morrell and Thackray, *Gentlemen of Science*, pp. 150, 151 ("Albemarle" is a reference to the Royal Institution, which began its fashionable Friday Evening Discourses at Albemarle Street in 1825); Charles Babbage to Charles Daubeny, 28 Apr. 1832, in Jack Morrell and Arnold Thackray, *Early Correspondence of the British Association for the Advancement of Science* (London: Royal Historical Society, 1984) (hereafter cited as **Morrell and Thackray, *Early Correspondence of the BAAS***), p. 137; and John Robison to John Phillips, 5 Oct. 1834, *ibid.*, p. 193.

¹³ Murchison to Vernon Harcourt, 21 Feb. 1839, in Morrell and Thackray, *Early Correspondence of the BAAS*, p. 301; J. Phillips to Harcourt, 27 May 1837, *ibid.*, p. 243; and J. Phillips to Ann Phillips, 11 Aug. 1836, in Morrell and Thackray, *Gentlemen of Science*, p. 154. On the organization of the sections see Morrell and Thackray, *Gentlemen of Science*, pp. 451–460; and O. J. R. Howarth, *The British Association for the Advancement of Science: A Retrospect, 1831–1931*, 2nd ed. (London: BAAS, 1931), pp. 79–89.

¹⁴ Women had been admitted to three sections in 1836 because wet weather canceled a grand promenade: *Times*, 25 Aug. 1836, p. 3d. Caroline Fox was taken into Section A (mathematics and physical sciences) in 1837: Fox, *Memories of Old Friends*, 14 Sept. 1837, p. 21. On women and botany see Ann B. Shteir, *Cultivating Women, Cultivating Science: Flora's Daughters and Botany in England, 1760 to 1860* (Baltimore/London: Johns Hopkins Univ. Press, 1996).

¹⁵ Murchison to Harcourt, 18 Sept. 1837, in Morrell and Thackray, *Early Correspondence of the BAAS*, p. 258; *Athenaeum* (1835), quoted in Morrell and Thackray, *Gentlemen of Science*, p. 154; and Murchison to Harcourt, 21 Feb. 1839, in Morrell and Thackray, *Early Correspondence of the BAAS*, p. 301. Provision of separate spaces for women in every meeting room was impossible for many host towns and was not insisted upon.

From the 1850s a very few women became members of the association, but most were admitted to individual meetings via Ladies' Tickets.¹⁶ Initially these were bought by male subscribers and members, and sales benefited the local reception committee. From 1841 these tickets were sold independently, with proceeds going directly to the BAAS and forming an important portion of its income. Morrell and Thackray have thus concluded that the presence of large numbers of women at the meetings quickly became essential, for two reasons. First, their financial contribution was irreplaceable; and second, as Babbage understood from the beginning, women acted as social "cement." Their presence thus became a marked feature of the annual meetings, as they "crowded the soirees" and thronged the theater doors to gain admission to evening lectures. Because Ladies' Tickets were transferable, "a vast number" of women might be "gratified with admission in the course of the week." As the century progressed, increasing numbers of women paid their £1 because of their own interest in the topics discussed, but these remained a small minority well into the twentieth century.¹⁷

More typically, women at BAAS meetings were related to visiting men of science, were members of the host town's leisured classes, or were tourists. These groups are represented by the women whose writings are considered in more detail later in this essay. Many women accompanied husbands, fathers, and sons who were speakers at the meeting. They provided practical, social, and emotional support, and to that extent the meetings were an extension of their domestic duties as much as a locus for intellectual or social stimulation. Others lived in the locality of the meeting and took advantage of the novelty on their doorstep or acted as hostesses. Personal or civic pride might be at stake as women took responsibility for visitors' lodgings, decorated the town's largest halls, and hosted private parties. Reportedly, ladies would "vie with each other in providing suitable accommodation for their distinguished visitors."¹⁸ Nonscientific visitors to the host town were essentially tourists. Sightseeing could be as or more important than science, especially since it was built into BAAS programs in the form of excursions, invitations to stately homes, and visits to public buildings and manufactories. The association itself was, of course, a sight worth seeing, and journeys to the meetings provided further opportunities for tourism along the way. None of these activities was unique to women, but convention dictated that such concerns would be of higher priority for them, with scientific interest sidelined accordingly.

¹⁶ Ladies' Tickets cost £1 and were transferable to other women but did not allow the holder to sit on council or committees or to receive a copy of the report of the meeting. Women still made up no more than 5 percent of the membership by 1900: Paula A. Gould, "Femininity and Physical Science in Britain, 1870–1914" (Ph.D. diss., Univ. Cambridge, 1998), p. 102. From the 1840s women very occasionally wrote and presented papers (see Browne, "Glimpse of Petticoats" [cit. n. 1]), and toward the end of the century they might be found acting as sectional secretaries. From the 1910s a few women were elected to the sectional councils or as sectional presidents. A similar pattern was found in the American Association for the Advancement of Science; see Sally Gregory Kohlstedt, *The Formation of the American Scientific Community: The American Association for the Advancement of Science, 1848–60* (Urbana/Chicago: Univ. Illinois Press, 1976), p. 103.

¹⁷ Morrell and Thackray, *Gentlemen of Science*, p. 149; and *Scotsman*, 13 Sept. 1834, p. 2. Available data on ticket sales is patchy but suggests that Ladies' Tickets might make up anything from 7 to 31 percent of the total, meaning anywhere between ca. 100 and ca. 870 tickets. The average number of Ladies' Tickets sold annually between 1881 and 1901 was 406. See Statements of Tickets Issued, 1839–1848, 1851–1855, Dep. BAAS 5, fols. 155, 161, 178–179, Bodleian Library; and General Committee Meeting Minutes, 1881–1916, Dep. BAAS 12–13, Bodleian Library. The Ladies' Ticket existed until 1919, when it became a Transferable Ticket, available to both sexes for £1. See Papers of the Committee of the Council on the Working of the Association, 1918–1922, Dep. BAAS 31, fol. 17, Bodleian Library. In 1919 this monetary contribution was still considered a valuable asset.

¹⁸ *Scotsman*, 30 Mar. 1850, p. 4.

THE FEMALE AUDIENCE AS “THE PUBLIC”

The BAAS has been seen by some historians as having “led the way in admitting women” to scientific meetings.¹⁹ Women’s presence at the BAAS in fact served to demonstrate the difference between the BAAS and metropolitan scientific societies: while women were accepted in this forum, with its social and popular aspects and its single annual meeting, the places where scientific business was discussed throughout the year remained steadfastly closed to them until the twentieth century.²⁰ Women came to characterize the association, for they were conspicuous at the events that led it to be known as the “Philosophers’ Picnic.” As Morrell and Thackray point out, this aspect of the meetings was vital to the association’s early success, creating a money-making “cultural resource.” Janet Browne has indicated that it also provided “moral authority” for the new organization at a time when its presence in provincial cities might have seemed threatening to social stability. The prosperity of the associates and their safely middle- and upper-class agenda were displayed in their wives’ dress, leisure time, and presence at church on the Sunday that marked the midpoint of each meeting.²¹

Yet the women’s presence could also serve to undermine the scientific credibility of the meeting or highlight the questions—never resolved in this period—of just who the meetings benefited, how comprehensible the speakers should attempt to be, and whether the BAAS advanced science by allowing men of science to exchange ideas or by explaining it to a wider public. Even sympathetic commentators harbored suspicions that an annual meeting with a large audience was not the best “means of advancing science.” As one newspaper commentator put it: “The Association is trying to serve two masters—science and the public. If it sticks to science its meeting becomes superfluous, or ought to be limited to scientific men. If it seeks to serve the public in a way the public can appreciate it must meet once in ten years, and have something to show that the unscientific mind may grasp and feel interest in.” This ambiguity served an important function in helping to define the very entities “science” and “the public.”²² These categories were not necessarily self-evident, and we suggest that the presence of women at BAAS meetings and descriptions of them in the media were important means by which they came to be crystallized.

Newspaper reports give little information about the duties or interests that brought women to the meetings. Throughout the nineteenth century they tended to be discussed collectively as “the ladies” and “the fair sex,” although a description of scientific females—“learned-looking maidens with eye-glasses and sober suits”—might appear as a contrast. In 1878 the *Irish Daily News* reported on a Section C (geology) excursion and

¹⁹ Lowe, “British Association and the Provincial Public” (cit. n. 1), p. 127.

²⁰ Likewise, the significant minority of female members of the Geologists’ Association and the British Astronomical Association served to ensure that the status of these organizations remained very different from that of the Geological Society or the Royal Astronomical Society. Women were admitted to societies as follows: Linnean Society (1904), Royal Geographical Society (1913), Royal Astronomical Society (1915), Geological Society (1919), Royal Society (1945). In contrast, the Zoological, Entomological, Botanical, Statistical, Anthropological, and Royal Scottish Geographical Societies had all admitted women in the nineteenth century.

²¹ Morrell and Thackray, *Gentlemen of Science*, pp. 148–157; and Browne, “Glimpse of Petticoat” (cit. n. 1), pp. 5–6. Wives with free time to appear at daytime social and cultural events functioned as status symbols. See Emma Barnes, “Fashioning a Natural Self: Guides to Self-Presentation in Victorian England” (Ph.D. diss., Univ. Cambridge, 1995), p. 105; and Leonore Davidoff and Catherine Hall, *Family Fortunes: Men and Women of the English Middle Class, 1780–1850* (London: Hutchinson, 1987), pp. 272–315.

²² *Glasgow News*, 13 Sept. 1876, p. 4, BAAS Press-cuttings 1876, Dep. BAAS 413, Bodleian Library; and Shapin, “Science and the Public” (cit. n. 2).



Figure 2. Women on a BAAS outdoor excursion in 1933. “Ready for the excursion,” *Aberdeen Press and Journal*, 8 Sept. 1934, p. 3, BAAS Press-cuttings 1934, Dep. BAAS 429, Bodleian Library. (Permission from Bodleian Library.)

noted the many “ladies of scientific aspect” who flourished their hammers enthusiastically: “Eagerly bent was seen many a fair scientist, rapping with her hammer at the rock, and examining through her spectacles, for it must be confessed that some of these geologically-[minded] ladies wore glasses of studious import, and indicative of midnight oil expenditure, the fragments broken off.” These individuals appeared unfeminine compared with those “who evidently more enjoyed the ‘outing’ than they were desirous of obtaining information about the Cambrian formation” and thus “looked on, strove to look learned, and sighed.” It was only after World War I, when women’s place in society as well as the BAAS had changed irrevocably, that scientific women as a group were portrayed positively. The “Women among the Scientists” might now be “fashionably-dressed girl graduates” and teachers, keen to be involved in the sectional meetings or outdoor excursions (see Figure 2).²³

Throughout the nineteenth century, reporters assumed that for most women the meetings were primarily a social occasion, for which buying a new bonnet was an essential preparation. In 1871 *Punch* mocked this aspect of the meetings and the new prominence of social science, interpreting both as feminine specialties for the pursuit of which “ladies gifted with the gab, and other feminine accomplishments, have been flocking” to the

²³ *Liverpool Mercury*, 6 Sept. 1888, quoted in David Sealey, “The British Association for the Advancement of Science: The 1896 Meeting Held in Liverpool” (M.Sc. diss., Univ. Liverpool, 1993), p. 28; *Irish Daily News*, 19 Aug. 1878, BAAS Press-cuttings 1878, Dep. BAAS 414, Bodleian Library; “Press Reports, Liverpool Meeting, Book 1” (1923), Dep. BAAS 425, p. 73; and *News Chronicle*, 4 Sept. 1933, BAAS 1932–1933, Dep. BAAS 428, Bodleian Library.

meeting and “flooding it with small talk upon this great matter.” In the 1830s and 1840s the *Times* campaigned against the BAAS, challenging its seriousness and its claims to utility. Unsurprisingly, the presence of women offered fodder for its attack: “the fluttering of a sea of bonnets” and “the closing of fair eyes in slumber” were deemed “inimical to learned sobriety.” Even when women seemed to be keenly attentive, this was presented either as a joke or as inexplicable. In 1878 the *Irish Times* found it “impossible to see what earthly good a crowd of ladies can derive from the parade of complexities.” Their presence was explained as the result of a search for social novelty, itself presented as a feminine trait and underlined by accompanying comments on fashion and dress. Journalists came to expect “the usual influx of gay and giddy-looking maidens some of them in the most outrageous and unscientific looking costumes,” but the “perseverance with which they attended the different meetings” was a “delightful and astonishing” conundrum.²⁴

The *Glasgow News* was rare in considering the “non-scientific ladies and gentlemen” together and assuming that for both attendance could be explained by “the idea that it was the thing to do, and that there was a certain novelty in the whole which broke the monotony of a daily ennui.”²⁵ Much more typically, the BAAS audience—which was in fact a continuum ranging from metropolitan men of science, through provincial men of science speaking at their local meeting, to men and women with a passing or little or no interest in science—was depicted as divided in two: men of science, described as speakers or informed listeners and respondents; and the lay public, frequently represented by “the ladies.”²⁶ While you could not necessarily tell by looking at a man that he had little scientific knowledge, it was a fair assumption (and one often made) that women had none. Women were presented as social beings, out of their element in sectional meetings and on outdoor excursions, where their brightly colored and cumbersome dress contrasted with the sobriety and uniformity of male garb (see Figure 3 and Frontispiece). Media portrayals of BAAS meetings thus often set forth a dichotomy in which the nonscientific public was represented by the feminine and the representatives of scientific expertise were, especially by contrast, masculine and authoritative.

Women were expected to have less understanding of scientific information, an assumption that makes space for the “gap of comprehensibility” sometimes held to be essential to the “boundary work” that creates agreement about what counts as science and who is given authority to speak about it.²⁷ The later nineteenth-century breakdown of natural theology, which had created a “common context” for scientists and their public, has been seen as key to the creation of a clearer division between these groups. Scientists were

²⁴ *Punch*, 19 Aug. 1871, 61:67; *Times*, 4 Aug. 1841, p. 4c; *Irish Times*, 17 Aug. 1878, p. 7, BAAS Press-cuttings 1878, Dep. BAAS 414, Bodleian Library; *Liverpool Mercury*, 6 Sept. 1888, quoted in Sealey, “British Association for the Advancement of Science: 1896 Meeting Held in Liverpool,” p. 28; and *Cambridge Independent Press*, 11 Oct. 1862, BAAS Press-cuttings, 1857, 1859–1860, 1862, Dep. BAAS 405, Bodleian Library.

²⁵ *Glasgow News*, 12 Sept. 1876, BAAS Press-cuttings 1876, Dep. BAAS 413, Bodleian Library.

²⁶ It is noteworthy that the other main group discussed as an audience of the BAAS in newspaper reports was the working classes, to which special lectures were addressed from 1867 to 1911; see Howarth, *British Association for the Advancement of Science: Retrospect, 1831–1931* (cit. n. 13), pp. 103–106.

²⁷ Shapin, “Science and the Public” (cit. n. 2), p. 993, points to the importance of a “gap of comprehensibility” in order to demarcate the expert from the nonexpert. He takes this concept from Kuhn’s view that the mathematical sciences were the first to acquire this noncomprehensibility: Thomas S. Kuhn, “Mathematical versus Experimental Traditions in the Development of Physical Science,” in *The Essential Tension: Selected Studies in Scientific Tradition and Change* (Chicago/London: Univ. Chicago Press, 1977), pp. 31–65. See also Thomas F. Gieryn, “Boundary-work and the Demarcation of Science from Non-science: Strains and Interests in Professional Ideologies of Scientists,” *American Sociological Review*, 1983, 48:781–795.



Figure 3. Women on a BAAS outdoor excursion in 1865. “The pursuit of science under difficulties” (Birmingham meeting), *Illustrated London News*, 23 Sept. 1865, p. 281. (Permission from Senate House Library.)

promoted as the only ones who could pronounce on secularized natural knowledge, and the public were told to be supportive but not interfering if they hoped to receive the ultimate utilitarian benefits of science.²⁸ While this was one means by which a “more docile public emerged together with the role of the professional scientist,” the images of both groups were reinforced by the depiction of a public that was apparently appreciative but unknowledgeable, passive, and often, or by association, feminine.²⁹

Women’s lack of scientific knowledge was underscored by assumptions that they were naturally less rational and more emotional than men. We therefore find scrutiny of their

²⁸ Shapin, “Science and the Public,” p. 1000; and Robert M. Young, *Darwin’s Metaphor: Nature’s Place in Victorian Culture* (Cambridge: Cambridge Univ. Press, 1985). Since women were regarded as a focus for domestic religious observance, the secularization of science itself acted to exclude them.

²⁹ Shapin, “Science and the Public,” p. 1000. This is a strategy equivalent to that described by Ann B. Shteir in “Gender and ‘Modern’ Botany in Victorian England,” in *Women, Gender, and Science: New Directions*, ed. Sally Gregory Kohlstedt and Helen E. Longino, *Osiris*, 2nd Ser., 1997, 12:29–38. John Lindley aimed to create a “scientific” and defeminized form of botany and succeeded in part by publishing a *Ladies’ Botany* (1834–1837) that placed women in “a botanical separate sphere” that was supportive of but separate from the professionalizing male world of botany (pp. 35–36).

responses as they were exposed to, for example, specimens such as skulls or discussions on the evolution of man.³⁰ Likewise, women's interest in science was often interpreted as a fascination with scientific celebrity. Women were reported to have flocked to see Dionysius Lardner, Michael Faraday, John Herschel, and David Livingstone, and, more generally, it was "particularly the softer portion" of the population that was understood to be "on the full gaze, to see what kind of creature a philosopher was." Because of these assumed differences, women were represented as being either especially interested in or bored by particular subjects. While botany, entomology, and geology were considered appropriate female interests, Section A (mathematics and physical science) was considered hard and masculine, even after women such as Hertha Ayrton, the first female member of the Institute of Electrical Engineers, had delivered papers there. Thus although in 1853 the *Times* noted "a growing desire among the lady inhabitants of the towns successively visited to avail themselves of the opportunities for scientific information afforded them by the presence of the *savans*," reporters could still highlight the difference between these attendees and the scientific members: "the lady subscribers have sometimes neglected the mathematical and physical section and have overlooked the poetry of statistics."³¹

From the 1850s, female audiences were most consistently connected to Section E (geography). This section began in 1851 and included ethnology until anthropology appeared, first in a subsection of Section D in 1868 and then in its own section in 1884. These subjects attracted large audiences, and it was often noted that "one-half or more" were ladies. Section E was understood to be popular because, as one commentator put it, "little or no antecedent scientific knowledge is necessary to enable the listeners to comprehend all the points in the memoirs read." Further, it satisfied the feminine interest in celebrity, for women were supposedly "attracted not so much by a desire to increase their geographical knowledge" as by famous travelers, such as Serpa Pinto, Paul Du Chaillu, Henry Morton Stanley, David Livingstone, John Ross, and Adolphus W. Greely.³² Geography and ethnology also touched on the question of the antiquity and origin of man, sparking heated debates on evolution and man's place in nature that were apparently enjoyed, with a frisson of fear, by female audiences. For most commentators, this interest in sensational travel tales and encounters with savage tribes implied women's lack of scientific seriousness.

Such identifications of expected feminine roles suggest that at BAAS meetings the dichotomy between (active/knowledgeable/male) scientists and (passive/uninformed/female) audience was generally clear and deemed satisfactory both in the sections and in more sociable contexts. The presence of women was potentially problematic, however, when the boundaries demarcating science or a particular field from other forms of

³⁰ *Glasgow News*, 14 Sept. 1876, BAAS Press-cuttings 1876, Dep. BAAS 413, Bodleian Library. This was also the case in other settings: male students at University College London would apparently turn during lectures to watch the reactions of female students when handed specimens of human brain. See Gould, "Femininity and Physical Science in Britain" (cit. n. 16), p. 42. On the arguments over women's intellect see Gates, *Kindred Nature* (cit. n. 3), pp. 13–22. See also Cynthia Eagle Russett, *Sexual Science: The Victorian Construction of Womanhood* (Cambridge, Mass./London: Harvard Univ. Press, 1989); and Ludmilla Jordanova, *Sexual Visions: Images of Gender in Science and Medicine between the Eighteenth and Twentieth Centuries* (New York/London: Harvester Wheatsheaf, 1989), Ch. 2.

³¹ *Times*, 24 Aug. 1836, p. 3b, 16 Sept. 1853, p. 5f.

³² BAAS Press-cuttings album, Newcastle 1863, Dep. BAAS 406, Bodleian Library; *Sheffield Daily Telegraph*, 21 Aug. 1879, BAAS Press-cuttings 1879, Dep. BAAS 415, Bodleian Library; and *Sheffield and Rotherham Independent*, 23 Aug. 1879, BAAS Press-cuttings 1879, Dep. BAAS 415, Bodleian Library.

knowledge were unclear. If female audience members were not in obvious contrast to the speakers and discussants, the latter might appear to lose authority. This could be the case within those sections that were accorded low scientific status, including geography, anthropology, social science, and education. In Section E, women provided a successful foil to the heroic, manly explorers they flocked to hear, but these same women could become problematic when their ability to understand and enjoy the papers and discussions conflicted with the organizers' desire to promote a more "scientific" geography and anthropology. James Hunt, calling for a separate section for anthropology, emphasized that its scientific status was being undermined: "There is much in our science which can never be made popular, and for which the 'Ladies' Section, E,' is hardly the fit place."³³

Another problem surrounding the male expert/female audience dichotomy was the threat posed by the presence of women who claimed equal or superior knowledge. Such women were particularly conspicuous in Section F (economics and statistics) and, from 1901, Section L (education). These sections, which often emphasized social and political reform, suffered from the attacks of those who felt that they did not deserve a place in a scientific meeting. They formed a counterpart within the BAAS to the Social Science Association (f. 1857), which was notable for the participation of women and was a major public forum for discussion on women's rights and suffrage.³⁴ Section F, described as "moderately popular" in 1879, apparently attracted those "interested in women's rights and such like matters." *Punch* lampooned the activism of women speakers like the suffragist Lydia Becker with a "Women's Rights' Vade Mecum," supposedly "Compiled for the use of Males by a Distinguished Female Member of the British Association," which suggested that since women are in the majority among the human species men should submit to their guidance.³⁵

The unnatural and possibly threatening presence of politically active or scientifically trained women was dealt with by depicting such women as unattractive or as absurdities. Such a stance was backed by the *Lancet*, which claimed that "the logical, philosophical, and scientific woman commonly departs from the ordinary type of her sex quite as much in her physical as in her mental characteristics." *Punch* dealt with the scientifically educated female BAAS audience member in the same way it tackled the possibility of female graduates and female doctors. There was puzzlement as to what they would do with the knowledge they had acquired, jokes about their competence, and fears that they would become masculinized or, in comic reversal, would somehow expose less well-informed men as feminized (see Figures 4 and 5). These assumptions and prejudices meant that women who identified themselves as interested in science had to be cautious about their self-presentation. For scientific women, as for female scholars, university

³³ James Hunt, "Anniversary Address Delivered before the Anthropological Society of London, January 3rd 1865, Dedicated to the British Association for the Advancement of Science," [p. 6], Anthropological Society Supplements, A8/2/2, Royal Anthropological Institute Archives, London.

³⁴ The troublesome nature of Section F in the association's early days, reflecting social and political questions, often with a particular local flavor, is discussed in Morrell and Thackray, *Gentlemen of Science*, pp. 291–296. On the participation of women and the discussion of their rights in the Social Science Association see Lawrence Goldman, *Science, Reform, and Politics in Victorian Britain: The Social Science Association, 1857–1886* (Cambridge: Cambridge Univ. Press, 2002), pp. 113–142. On women and the methodology of the social sciences see Lynn McDonald, *The Women Founders of the Social Sciences* (Ottawa: Carleton Univ. Press, 1994).

³⁵ *Sheffield Daily Telegraph*, 21 Aug. 1879, BAAS Press-cuttings 1879, Dep. BAAS 415, Bodleian Library; and *Punch*, 6 Sept. 1879, 77:99. See also Susan David Bernstein, "'Supposed Differences': Lydia Becker and Victorian Women's Participation in the BAAS," in *Repositioning Victorian Sciences: Shifting Centres in Nineteenth-Century Scientific Thinking*, ed. David Clifford, Elizabeth Wadge, Alex Warwick, and Martin Willis (London: Anthem, 2006), pp. 85–93.



Figure 4. Bath meeting, illustrated in the Graphic, 15 Sept. 1888, p. 289. (Permission from Senate House Library.) Note the respectively masculine and feminine appearances of the industrious and idle women at the top right.



Figure 5. "Terrible result of the higher education of women." Miss Hypatia Jones, Spinster of Arts (on her way to Refreshments), informs Professor Parallax, F.R.S., that "Young Men do very well to Look at, or to Dance with, or even to Marry, and all that kind of Thing!" but that "as to enjoying any Rational Conversation with any Man under Fifty, that is completely out of the Question!" Punch, 24 Jan. 1874, 66:38. (Permission from Bridget Besley.)

graduates, and politically active women, there was a need to “keep up appearances.”³⁶ Negative stereotypes led many, more or less consciously, to emphasize their femininity through dress and demeanor or by maintaining a successful domestic life.

Anxiety about the increasing presence of scientific women at the BAAS might also have been diffused by the fact they continued to be outnumbered by nonscientific wives and the merely curious. This is suggested by the reaction of some members of the association’s all-male Red Lion dining club to the 1897 proposal that “ladies of distinction” be elected to committees. Rather than joking at the expense of the scientific women to whom the proposal referred, the Lions listed their own wives and daughters in the program for a fictional “Section W” for women. Emphasizing the supporting role and presumed identity of these women with their husbands and fathers, many of the invented titles echo those of actual papers. Thus Sir John Evans’s paper “On the antiquity of man” was purportedly rendered by his much younger wife as “On the age of man and the youth of woman.” The wife of the geographer H. R. Mill was to speak “On the Superiority of Lake Superior.” Some were even more personal, as with Marie Selous on “How I captured my Lion”—Frederick Courtney Selous being a much-lionized game hunter and explorer—and Sophia Le Neve Foster’s “On the doctrine that ‘None but the brave deserve the fair’”—celebrating the courage of her husband, Clement Le Neve Foster, during a mining accident in May 1897. Many of the titles served to highlight supposedly feminine concerns. Thus Emily Poulton was to give a “Note on the decorative application of Coloeoptera,” Marian Vernon Boys to offer a “Preliminary note on the effect of going on electric cars in one’s pink satin gown”; others were to speak on peach blossom, the brightness of a pair of eyes, and porridge.³⁷

Despite such ridicule, women made many important contributions to science throughout the nineteenth century, and they made significant advances within organizations like the BAAS during its last decades. Well into the twentieth century, however, organizers considered women as a distinct group, for whom special arrangements obtained.³⁸ Those who wished to follow the full program of a particular section could be seen as awkward oddities.³⁹ We suggest that the traditionally ascribed roles of women as passive recipients were so enduringly strong throughout the century that, collectively, they continued to define the sociable context of BAAS meetings and, indeed, came almost to guarantee the presence of a lay audience for the messages of the scientific elite. The following section illustrates these female roles through the writings of a number of women who attended BAAS meetings between 1835 and 1901. While some had significant interest in the content of sectional meetings and evening lectures, none attempted to challenge the deeper

³⁶ *Lancet*, 30 May 1874, 1:772, quoted in Gould, “Femininity and Physical Science in Britain” (cit. n. 16), p. 14. On the depiction of scientific women in *Punch* see *ibid.*, pp. 195–199; and Constance Rover, *The Punch Book of Women’s Rights* (London: Hutchinson, 1967), pp. 57–65. On the need to “keep up appearances” see Gould, “Femininity and the Physical Sciences in Britain,” p. 11 and Ch. 1.

³⁷ Program for “Section W,” Aug. 1897, James Bain MSS, B1965-0021/02, University of Toronto Archives.

³⁸ Separate information regarding arrangements “so far as they affect Ladies” might be issued by the organizers, as in Leeds in 1858. As late as 1929 the organizers of the South African meeting formed a Ladies’ Committee “for the entertainment of lady members”: Memorandum from Town Clerk, 29 June 1929, 3/CT 4/4/1/31 HM 217/4, Western Cape Provincial Archives, Cape Town.

³⁹ David Rivett, the Organizing Secretary for the Australian meeting of 1914, was unable to comprehend the complaint of discrimination from the geologist Margaret Crosfield after he decreed that “ladies cannot go on geological excursions: these may be rough, wet and arduous”: David Rivett to O. J. R. Howarth, 10 Feb. 1914, Annual Meeting Australia Correspondence, Dep. BAAS 234, fol. 205, Bodleian Library. He dismissed her complaint, adding “we have no ill feeling towards ladies as such”: Rivett to Howarth, 28 May [1914], A. C. D. Rivett Papers, MS 83/31, 3–5, Adolph Bassier Library, Australian Academy of Science, Canberra.

interest of their male relations or acquaintances. The emphasis of all the accounts is primarily on experiencing, observing, and reporting on the social and touristic aspects of the meeting or on personal interactions with individuals. Where responses to the scientific content of the meeting are recorded, they tend to follow the approved and expected themes. While these responses were not exclusive to women, we would suggest that they could be defined as feminine and reinforced expected gender roles.⁴⁰

WOMEN'S EXPERIENCES OF THE BAAS

Media depictions of women at BAAS meetings were informed by women's outward behavior, which was, reciprocally, influenced by the expectations of society and the media. While evidence from diaries and letters is useful in allowing us to test and to go beyond the collective assessments of commentators, it should not be surprising that these sources also reveal a compliance with social norms. The cultural assumptions that produced clichéd accounts of women's behavior also encouraged women to conform to the prescribed roles and to present themselves in their private writings as acceptably conformist. In the majority of the texts examined the authors demonstrate a low level of interest in science. Both these individuals and those with greater engagement in the scientific content of the meetings defer to the knowledge of the men they encounter socially. The three overlapping roles these women most frequently played are the familial supporter, the consumer or enabler of social interaction, and the observer.

The first duty of women accompanying male relatives was to listen to their father's, son's, or husband's papers and to comment favorably. Caroline Fox recorded that her father read his paper well, that two sections had competed for his presence, and that, when questioned, he "answered very well and with no nervousness." Lady Rayleigh listed all the occasions on which her son was complimented and was in attendance when "dear John, looking so nice, with a clear voice, read his [presidential] address," reporting that it was fully audible and that she "liked it extremely, and people seem to think it was very good." Mother and son were clearly close, and Lady Rayleigh's account thoroughly domesticated an important moment in the scientific calendar: "when John read one or two passages which he thought would particularly 'fetch' me, he looked with a little twinkle in my direction and of course I twinkled in return." Emily Poulton not only attended "*the great Lecture, by Prof. E. B. Poulton,*" which was of course "a great success," but gave her husband practical assistance by helping to catch insects, transport slides, and test the volume of his voice in the large lecture hall.⁴¹

Such support evidently came more easily to some women than others. Charles Darwin's wife, Emma, went to the 1849 and 1855 meetings in Birmingham and Glasgow but does not seem to have enjoyed either experience. Darwin reported that when he commented to her at a BAAS lecture, "I am afraid this is very wearisome to you," she replied, "Not more

⁴⁰ It has not been possible to do a comparative study of the writings of nonscientific male attendees. One example, however, is J. J. A. Boase, who went "to see something of The British Association" in Oxford when en route to a tour of Ireland. He was accompanied by his son Charles, who lived in Exeter College, and he was decidedly a tourist, including descriptions and illustrations of buildings in his account. He was excited to see "the Lions," mentions events like dinners, and particularly enjoyed a talk on polar exploration. The chief difference between his account and those of the majority of the women discussed here is that he always included something, however brief, to describe the papers given and objects exhibited. J. J. A. Boase, "A Ramble in Ireland," *Journals of Tours*, Vol. 8 (1860), Add. MS 35,052, British Library, London.

⁴¹ Fox, *Memories of Old Friends*, 22 Aug. 1857, p. 312; Strutt, *British Association's Visit to Montreal, 1884*, 29 Aug. 1884; and Diary of Emily Poulton, 17 Aug. 1905, MS Eng.e.2023, fol. 29v, Bodleian Library.

than all the rest.” Her diary for 1855 records that during the first part of the week she did attend some sectional meetings, but increasingly she opted out as a headache and a cold developed. Charles thus went alone to an evening lecture by Colonel Rawlinson and to the final dinner. Emma Darwin’s daughter remembered her mother telling a visitor that although on marriage “she had resolved to enter into my father’s tastes and thought she would be able,” she had in fact “found it impossible.”⁴² Although the support she gave her husband was undoubtedly important, it did not extend to engagement with his research: for every scientific helpmeet like Jane Dee, Elisabetha Hevelius, and Marie Lavoisier, there would no doubt have been many more Emma Darwins. Emma did enable another scientific wife to extend support, however, when she took the seven children and two nurses of Thomas and Henrietta Huxley into her home so that Henrietta could accompany her husband to the Liverpool meeting of 1870.⁴³ Child care and childbearing were significant factors to be negotiated in order to enable women to attend meetings at all, and Emma herself was confined during a number of the summers that her husband attended BAAS meetings.

Given the practical difficulties that might prevent attendance, it is interesting that many women freely admitted their lack of interest in the scientific matters under discussion. Many found sessions uninteresting and would stave off boredom by passing rapidly through several different sections. Margaret Smith found that “the Preliminary address was a tough one. Frankly I lost my way completely in it & so did most ladies.” She noted that this was also the case for “many men” and that that her houseguest “Prof [William] Ramsay was nodding conspicuously—& he was only kept from snoring by pin pricks.” Long speeches by poor speakers bored everyone; but when considering content rather than delivery, the question arose: At what audience should speakers aim? It was a justifiable view that speakers—especially those delivering evening lectures and addresses—ought to be generally comprehensible. Smith therefore praised Francis Darwin’s lecture as “beautiful & most interesting” because “it was in absolutely good simple language with hardly one word an outsider could not understand.” Others, however, “thought it too obvious.” Similarly, Emily Poulton found Oliver Lodge’s address on “Ether & Space” “not so difficult to understand” but noted that “the real scientific people thought it rather elementary.”⁴⁴ The enjoyment of popular lectures, though indicating interest in the chosen topics, here signaled a lack of expertise.

As suggested earlier, the same could be true of enjoyment of papers on geography, ethnology, and anthropology. Examination of the available evidence confirms the popularity of these fields with women. Although Caroline Fox reported on discussions in the physical and chemical sections when attending meetings in the 1830s, in the 1850s she devoted most space in her diary to Section E. In 1852 she described a session devoted to discussions of the Arctic and felt it was “a great treat to be present” at a session on the fate of John Franklin, in which for all “the interest was intense.” Likewise, in 1857 she was

⁴² H. E. Litchfield, ed., *Emma Darwin: A Century of Family Letters, 1792–1896*, 2 vols., Vol. 2 (London: John Murray, 1915), p. 48; and “Emma Darwin’s Diaries, 1824–1896,” Darwin Online (<http://darwin-online.org.uk/EmmaDiaries.html>), entries for 12–18 Sept. 1855. Her diary for 1849 records only that she followed her husband to the Birmingham meeting.

⁴³ Jane Dee, Elisabetha Hevelius, and Marie Lavoisier are three of the examples of women who contributed to “Domestic Science” offered in Patricia Fara, *Pandora’s Breeches: Women, Science, and Power in the Enlightenment* (London: Pimlico, 2004). Regarding the Huxleys see Litchfield, ed., *Emma Darwin*, Vol. 2, p. 186.

⁴⁴ Margaret Smith to Susan Smith, 13 Sept. 1901, 18 Sept. 1901, TD 1/967, Mitchell Library; and Diary of Emily Poulton, 9 Aug. 1914, MS Eng.e.2025, fol. 33, Bodleian Library.

struck by the “extremely interesting collection of African Explorers—Dr. Barth, De l’Abbadie, and Dr. Livingstone.”⁴⁵ In the same year Caroline Howard and her companion found they “were rather tired of Geology” and found zoology “so uninteresting” that they skipped it in favor of the crowded Section E. In fact this was less stimulating than they had hoped, but they were later greatly excited by Livingstone’s lecture.⁴⁶ Lady Rayleigh went to Section A and took in “something of Chemistry” in Section B, but she recorded anything of the transactions only when she came to hear “Captains Ray and Greely of Arctic fame” in Section E, especially the fact that Greely “and his living companions saved themselves from starvation by eating their dead ones” (for which, incidentally, she did not blame them). Margaret Smith was “amused” by anthropology, largely because the speakers “had very contrary views.” A quarter of a century earlier Agnes Hudson had also deemed anthropology amusing, despite finding the exhibition of “skulls, mummies etc.” rather “unpleasant”—again because the speakers got “quite excited over” their disagreements.⁴⁷

Hudson’s accounts of her experiences at these sections in 1875 and 1879 echo newspaper reports very precisely. One newspaper, for example, queried the interest of otherwise “fastidious ladies” in anthropology, given that “there were many skulls staring them in the face.” Elsewhere Hudson wrote of attending Section E in order to hear Clements Markham on Arctic exploration—but having first to sit through Colonel Montgomerie on the Himalayas, which she found “not at all interesting and which I do not think anyone would have listened to but that the Arctic expedition came next.” Similarly, she recorded that Serpa Pinto was time-tabled to read a paper but instead “deputed an English man to read it for him, and we did not find it so interesting as we had expected.” Virtually identical observations were made in the *Sheffield and Rotherham Independent*. That report noted the popularity of Section E, “especially when great travellers are to record their experiences,” and claimed that “ladies were the most earnest students of geography.” Despite their “remarkable interest,” however, the “paper was somewhat disappointing, for not only was it not read by Major Pinto, but it contained little of general interest.”⁴⁸ Hudson, who appears to have had very little scientific knowledge, was the epitome of the nineteenth-century BAAS female described by newspaper reporters; for her, geography, anthropology, excursions, and soirées were indeed the key elements of sociable science.

As newspaper reports and the nature of these women’s interest in geography suggest, seeing and describing the scientific lions took a prominent place in women’s accounts of BAAS meetings. The faces and manner of those made famous by lecture tours, books, and periodicals were examined on the understanding that they would reveal something of mental character or hint at experience undergone and hardship endured. Caroline Fox

⁴⁵ Fox, *Memories of Old Friends*, 4 Sept. 1852, p. 278, 28 Aug. 1857, p. 313.

⁴⁶ Lady Caroline Howard (b. 1837?), probably niece of the fourth earl of Wicklow, was at the Dublin meeting of 1857: Journal of Caroline Howard, 27, 28, and 31 Aug. 1857, Wicklow Papers, MS 4792, National Library of Ireland, Dublin. Howard was unable to attend Livingstone’s lecture because she had sprained her ankle, but she reported that one of her companions “enjoyed herself so much and brought me back such an account of it that I felt quite in despair at being laid up.”

⁴⁷ Strutt, *British Association’s Visit to Montreal, 1884*, 31 Aug. 1897; M. Smith to S. Smith, 18 Sept. 1901, TD 1/967, Mitchell Library; and Diary, probably by Agnes M. Hudson, 26 Aug. 1875, MS Eng.e.3386, fol. 6, Bodleian Library.

⁴⁸ *Glasgow News*, 14 Sept. 1876, BAAS Press-cuttings 1876, Dep. BAAS 413, Bodleian Library; Diary, probably by Agnes Hudson, 31 Aug. 1875, 22 Aug. 1879, MS Eng.e.3386, fols. 11v, 60v, Bodleian Library; and *Sheffield and Rotherham Independent*, 23 Aug. 1879, pp. 2, 6, BAAS Press-cuttings 1879, Dep. BAAS 415, Bodleian Library.

wrote of David Brewster's "sagacious Scottish face" and was much struck by accounts of Lord Rosse's simplicity and generosity. Sara Jane Clarke records that she "was truly impressed by the manner and presence" of men such as Thomas Romney Robinson, Sir John Ross, Brewster, "and Lord Ross[e], of philosophic and telescopic renown."⁴⁹ Family ties meant that Margaret Smith could enjoy the fact that her less well-connected guests "gasped hysterically when they heard we were expecting" the "dear Kelvins." Such name-dropping was common, and personal acquaintance could be a social coup: contemporary etiquette books reminded women that in novel situations they would be judged by the quality of the acquaintanceships they could display.⁵⁰

This kind of detail serves to indicate status, but these women tended to avoid the unfeminine self-absorption that the very act of diary writing might seem to indicate by virtually removing themselves from their texts. Instead they emphasized descriptions of events and other people. Like newspaper reports, these writers focused on descriptions not only of the famous men of science but also "the muster of humanity at these meetings."⁵¹ Sara Jane Clarke reported her observations as a foreigner and a tourist, commenting on the meeting place (Belfast), the men of science, and the attitude of the locals to the event: "great interest was manifested by all classes. This would be nothing remarkable in America, where every man, and almost every woman, feels an enlightened interest in all matters and movements of literature, science, morality, and politics; but here it is a fact significant and inspiring." Several writers included physical descriptions of persons met or observed, showing an interest in the domestic, the social, the fashionable, and the personal. Lady Caroline Howard gave a frank and judgmental description of almost everyone she met. She stayed at one event "nearly the whole evening watching the curious assemblage," including Quakers, fashionable ladies, and "shopkeepers in their best." Caroline Fox, perhaps one of the Quakers observed by Howard, enjoyed watching "a beautiful girl just before us, who was most obliging in putting herself into the most charming attitudes for our diversion." Harriet Martineau said that the "fair sex . . . was there to sketch the *savans* . . . or to pass the time by watching and quizzing the members." Agnes Hudson found "plenty of amusement in listening to the conversation of our fellow passengers" on an excursion.⁵² Helen Shipton refers to a woman at the 1892 meeting in Edinburgh who claimed that the only reason she was there was for the purpose of "Looking on!" or "studying character—a study for which there is here a wide and interesting field."⁵³

⁴⁹ Fox, *Memories of Old Friends*, 23 Aug. 1852, pp. 276–277; and [Sara Jane Clarke Lippincott,] *Haps and Mishaps of a Tour in Europe* (London, 1854), 18 Sept. 1852, pp. 108–112, on p. 108. Sara Jane Clarke (1823–1904) was an American author (publishing as Grace Greenwood) who took in the meeting in Belfast during a European tour in 1852. She married Leander K. Lippincott in 1853.

⁵⁰ M. Smith to S. Smith, 13 Sept. 1901, TD 1/967, Mitchell Library. Regarding etiquette see F.W.R. and Lord Charles X, *The Laws, & Bye-Laws of Good Society: A Code of Etiquette* (London: Simpkin, Marshall, [1870]), pp. 34–35; other examples are given in Barnes, "Fashioning a Natural Self" (cit. n. 21), pp. 88, 92. Correct manner and attire were equally important when encountering strangers.

⁵¹ *Liverpool Mercury*, 6 Sept. 1888, quoted in Sealey, "British Association for the Advancement of Science: 1896 Meeting Held in Liverpool" (cit. n. 23), p. 28. On unfeminine self-absorption see Blodgett, *Centuries of Female Days* (cit. n. 7), p. 31.

⁵² Lippincott, *Haps and Mishaps of a Tour in Europe* (cit. n. 49), 18 Sept. 1852, 23 Sept. 1852, pp. 108–112, on p. 112; Journal of Caroline Howard, 29 Aug. 1857, Wicklow Papers, MS 4792, National Library of Ireland; Fox, *Memories of Old Friends*, 22 Aug. 1836, p. 4; Harriet Martineau, *Harriet Martineau's Autobiography*, 2 vols., Vol. 2 (London: Virago, 1983), p. 137; and Diary, probably by Agnes Hudson, 23 Aug. 1879, MS Eng.e.3386, fol. 62v, Bodleian Library.

⁵³ Helen Shipton (b. 1857?), an author published by the Society for the Promotion of Christian Knowledge, attended the 1892 Edinburgh meeting during her residency at a summer school run by Patrick Geddes

Playing the role of observer allowed the female writer to distance herself from other women and perhaps to criticize the assumptions—shared by men and women—about appropriate roles. Ever the wry commentator, Fox excluded herself from her joking description of what was expected from “the ladies, dear creatures.” The same is true of her clear-eyed account of Sedgwick’s flattery in “saying many soft things to the soft sex” at Section C. Martineau was thoroughly critical of other female attendees, writing, “I was in truth much ashamed of the ladies; and I wished they had staid at home, preparing hospitalities for the tired *savans*, and showing themselves only at the evening promenade . . . and at the ball.” Shipton frowned on the woman who was merely observing, claiming of her group, “We all have ambitions, we all want to be something more than lookers-on.” She was recalling the month-long summer school held by the sociologist Patrick Geddes, the participants in which were conspicuous at BAAS conversaciones and excursions. They included “a bevy of American girls,” a “Miss G” who knows everything worth knowing about “woman’s work in the world,” a “gentle baby-faced girl” who is “a clever high-school mistress,” and the author herself, who wrote for children.⁵⁴

Generally, however, these women devoted more space to describing—and energy to experiencing—the soirées, dinners, nonscientific excursions, garden parties, and general meetings than to the content of lectures or sectional meetings. Initially, of course, it was only the sociable occasions that women were intended to experience. Thus in 1836 Caroline Fox reported that after “the gentlemen returned from their sections” the ladies, left at home all day, insisted on attending a popular evening lecture that the men were content to miss. Details of the evening events are ubiquitous, sometimes accompanied by a discussion of matters such as dress and ornament, and the impression drawn from many diaries is of a week in which the scientific papers came a decided second to hectic socializing. In 1901 Margaret Smith chose a lunch appointment over a lecture, for, as she noted, “one cannot really do everything.”⁵⁵ For Lady Morgan, a well-known socialite, the whole week centered on the dinner party and soirée that she hosted in her home. Women’s experiences were clearly shaped by their social status and the nature of their BAAS contacts. Those with scientific fathers, husbands, and sons had many “British Association friends” and enjoyed the opportunity to engage in scientific conversation at breakfast and dinner parties. The teenaged Caroline Fox was thus in a position to have “a thorough set-to on phrenology” over breakfast, pleased that Lord Northampton “acknowledged the force of my arguments!”⁵⁶ Lady Caroline Howard, on the other hand, lacked scientific contacts but lived near the Dublin location of the 1857 meeting and thus had friends and family around her and the opportunity to extend her acquaintance with more distant neighbors.

As active members of BAAS audiences, women had some control over their experiences of the meetings. These experiences were also mediated by other people, however, especially men. Escorts or chaperones were essential even after Ladies’ Tickets could be purchased independently. Howard recorded that “the Finlays are staying with us as Uncle

(1854–1932). Her experiences were recorded in Helen Shipton, *August Episodes: Studies in Sociability and Science* (London: A. D. Innes, 1893); the quotation is from p. 84.

⁵⁴ Fox, *Memories of Old Friends*, 16 Sept. 1837, p. 22; Martineau, *Harriet Martineau’s Autobiography* (cit. n. 52), Vol. 2, p. 137; and Shipton, *August Episodes*, pp. 85, 9, 13, 86.

⁵⁵ Fox, *Memories of Old Friends*, 22 Aug. 1836, p. 4; and M. Smith to S. Smith, 18 Sept. 1901, TD 1/967, Mitchell Library.

⁵⁶ Lady Morgan (ca. 1783–1859), novelist and socialite, attended the 1835 Dublin meeting; Sydney Owenson, *Lady Morgan’s Memoirs, Autobiography, Diaries, and Correspondence*, ed. W. H. Dixon, 2 vols., Vol. 2 (London, 1862), pp. 404–406. Fox’s triumph is recorded in Fox, *Memories of Old Friends*, 16 Sept. 1837, p. 22.

Finlay has to chaperon us every[where].” One gentleman, “much surprised” to find that Hudson and her sister “had no one to look after us” at the “microscopical soirée,” felt duty-bound to inform them that “some of the objects under the microscopes were well worth looking at.” In fact, they found that “it required more patience than we possessed” to look at the exhibits and chose instead to relieve the heat of the crowded rooms with “a large quantity of ices.” Hudson’s intellectual enjoyment was much increased when she attended another soirée four years later. This time she toured the exhibition of “scientific inventions” under the escort of a Mr. Hobson, “who was ready to explain everything.” A few days later, on an excursion, she and her sister “enjoyed highly intellectual conversation,” as Mr. Hobson’s brother “favour[ed] us with his views of the education of girls and on many other subjects.”⁵⁷

The presence of the Mr. Hobsons, sons of a family friend, hints at the association’s role as a space for courtship or even as a marriage market. Newspapers and journals alluded to these matters, and there are examples of couples who met at such meetings.⁵⁸ Scientific talks and exhibits offered young men an ideal opportunity to show off their superior knowledge and to pay courteous attention to young women.⁵⁹ Women, meanwhile, could gain attention by requesting information and listening admiringly. The only time Howard recorded scientific information in her diary was when it had been provided by Joseph Beete Jukes—who was “a very good looking man” despite having “such an ugly name.” Shipton’s account describes flirting and records that she surprised a couple kissing. Her views on the equal but complementary roles of the sexes were perhaps influenced by Geddes. Although she described the women’s seriousness, as well as much energetic fun-making, she presented Geddes’s wife, the “Queen Consort,” as a supportive, maternal figure and called the women of the group “Maids of Honour.” Their acquisition of knowledge was clearly intended to make them better suited to particular kinds of work, above all the teaching of their own and other children.⁶⁰

The evidence we have assembled from women’s diaries demonstrates the extent to which feminine roles and responses were internalized. These texts also reveal the extent to which women brought, as it were, the domestic sphere with them to meetings, despite the second half of the nineteenth century being viewed as a period in which the domestic, and therefore the feminine, was removed from the world of science.⁶¹ These women

⁵⁷ Journal of Caroline Howard, 26 Aug. 1857, Wicklow Papers, MS 4792, National Library of Ireland; and Diary, probably by Agnes Hudson, 26 Aug. 1875, 25 Aug. 1879, 28 Aug. 1879, MS Eng.e.3386, fols. 6v–7, 64v–65, 66v, Bodleian Library.

⁵⁸ See, e.g., “The Old Story (Scientific Version),” *Punch*, 1 Sept. 1877, 73:95. One example was Paulina Jermyn Jermyn, who was introduced to her future husband, Walter Calverley Trevelyan, at the 1833 meeting; see Morrell and Thackray, *Gentlemen of Science*, pp. 149, 152. Browne, “Glimpse of Petticoats” (cit. n. 1), points to David Brewster, Leonard Horner, John Henslow, Lord Northampton, and William Jardine as examples of men of science who brought their marriageable daughters to meetings.

⁵⁹ This was likewise true of scientific conversations and exhibitions elsewhere. An excellent example, from the male point of view, is provided by comments and a drawing in the diary of Andrew Ramsay (1814–1891) of the Geological Survey. The latter shows two survey men flirting with young women while ostensibly showing them and their female chaperone around London’s Museum of Practical Geology. See J. Second, *Victorian Sensation* (cit. n. 1), pp. 173–175.

⁶⁰ Journal of Caroline Howard, 27 Aug. 1857, Wicklow Papers, MS 4792, National Library of Ireland (Jukes [1811–1869] was director of the Geological Survey of Ireland); and Shipton, *August Episodes* (cit. n. 53), p. 83. For Geddes’s views see Patrick Geddes and J. Arthur Thomson, *The Evolution of Sex* (London: W. Scott, 1889). On theories of the nature of women see the introduction to Russett, *Sexual Science* (cit. n. 30); and Gates, *Kindred Nature* (cit. n. 3), Ch. 1.

⁶¹ It has been suggested that the “underrepresentation of women comes not so much from the exclusion of women from science, but rather from the exclusion of the *domestic* realm from science, and the incidental

reinforced conventional relations between the sexes in their behavior toward family members, new acquaintances, and BAAS speakers. As we have seen, interchanges frequently played out the assumption that males were active and knowledgeable and women passive and ignorant. This behavior confirmed social roles but also had the effect of bolstering scientific status. When Margaret Smith reported the success of her nephew in understanding the lectures and upholding discussions with the visiting men of science, her admiration may have played a role in encouraging him to study science at university. His confidence was no doubt increased when he was allowed to show off to his aunt and another female member of the party by recommending books, quoting scientists, and discoursing “happily . . . all the way home about atoms & their divisibility & size.” Likewise, he undoubtedly enjoyed being “dreadfully shocked” when his aunt admitted that she “thought the President was talking about iron—& not ions.”⁶²

As long as the demands of conventional propriety called for men to act as intermediaries, they often controlled women’s experience of the meetings. Frequently they took women into the sectional meetings that reflected either their own interests or their view of what subjects were suitable for women. Fox reported, as a matter of course, that Professor Wheatstone “took us to the Physical Section” and that “Colonel Sabine took us into the Ethnological Section.” Lady Aberdeen relied on her house guest Henry Drummond, who “knew exactly which sections & which wise men to take us to hear,” but was rather blunt when writing that “Henry had consigned me in Biology.”⁶³ It would be wrong to suggest that this was always the case, however, for there is evidence that women determinedly dragged their husbands along to things they wanted to see or do, attended sections alone, and took excursions elsewhere with friends. Women might certainly control their own experiences and sometimes had wider influence, at least in the social sphere and if their status allowed. Lady Aberdeen’s arrangements for her reception choreographed the scientific “grandees” and dictated who had access to them and where. Lady Morgan succeeded in attracting fifty philosophers to her home for an event she later described as “very fine, learned, scientific, and *tiresome*!”⁶⁴

Occasionally women were in a position to gain access to experiences and information that men did not have. This was particularly the case for the overseas meetings, where seeing the country, communicating with residents, and cementing imperial bonds were as important as the reading of papers. Emily Poulton’s diaries of the 1897, 1905, and 1914 overseas meetings in Toronto, South Africa, and Australia show that women of the official BAAS party were often invited to more functions than the men. Women’s societies and clubs, such as the Daughters of Empire, arranged endless lunches and garden parties that enabled Poulton to gain an understanding of life in the colonies. Her conversation with a governor’s wife in 1914 struck her as much as any of the more formal exchanges provided by the association.⁶⁵ Poulton was, however, among the party of the honored scientific elite.

concomitant exclusion of women”: Pnina G. Abir-Am and Dorinda Outram, “Introduction,” in *Uneasy Careers and Intimate Lives*, ed. Abir-Am and Outram (cit. n. 3), pp. 1–16, on p. 3.

⁶² M. Smith to S. Smith, 13 Sept. 1901, TD 1/967, Mitchell Library.

⁶³ Fox, *Memoirs of Old Friends*, 14 Sept. 1837, 4 Sept. 1852, pp. 21, 278. Lady Aberdeen (1857–1939) was married to the Governor General of Canada at the time of the 1897 Toronto meeting; see Ishbel Maria Gordon, *The Canadian Journal of Lady Aberdeen*, ed. John T. Saywell (Toronto: Champlain Society, 1960), p. 408.

⁶⁴ Gordon, *Canadian Journal of Lady Aberdeen*, p. 407; and Owenson, *Lady Morgan’s Memoirs* (cit. n. 56), 15 Aug. 1835, Vol. 2, p. 406. M. J. Peterson has argued that social status overrode gender in allowing access to privileged spaces and particular individuals: *Family, Love, and Work in the Lives of Victorian Gentlewomen* (Bloomington: Indiana Univ. Press, 1989), p. 190.

⁶⁵ Diary of Emily Poulton, 2 Aug. 1914, MS Eng.e.2025, fol. 26, Bodleian Library. Another, later diary, which indicates that women on the BAAS overseas visits were “almost overwhelmed by the hospitality showered upon

Women of uncertain social status, or those who knew few other attendees or behaved in a socially unacceptable manner, would have had very different experiences. For most women, the quality of their experience at BAAS meetings depended on their comportment rather than their knowledge or enjoyment of science.

CONCLUSION

For women, even more than for men, acceptance depended on social status and polite manners. The groups within the BAAS to which they linked themselves varied according to their social and scientific connections, but, at the very least, their presence indicated that they belonged to the reasonably affluent and leisured classes who could form a respectable, if not informed, audience for scientific knowledge. In this they were one step up from the male working classes, who were catered to separately with special lectures. For most of these women science was neither part of their everyday lives nor something completely outside their experience. It might be part of the texture of their domestic lives or one among a range of cultural activities with which their lives were enriched. The BAAS could effectively be replaced by the Social Science Association or the Archaeological Association—or even by the sorts of historical lecture series Emily Poulton attended or the concerts and architectural tours undertaken by Agnes Hudson. The BAAS was a social and cultural resource, and women took advantage of the opportunity it offered for instruction and entertainment, with the balance between these elements shifting according to individuals' interests, abilities, and expectations or, possibly, the needs of their husbands. The meanings attendees attached to science varied, being largely determined by the normal life to which this week was compared. For some the meetings were no doubt liberation from the routine of daily life, a chance to extend mental and physical horizons within an environment deemed acceptably safe. For others they were occasions for performing filial or marital duties and thus were, perhaps, more an extension of domestic routine than an escape from it. Women's traditional supporting roles as wives and daughters were extended to support of the BAAS. They oiled the social cogs of the association's scientific and civic machinery by congratulating their husbands, preparing their towns for the reception of the visitors, and admiring the knowledge of male acquaintances or speakers.

Throughout the nineteenth century the vast majority of female BAAS attendees remained scientifically uneducated, and the assumption that this was so generally dictated their experiences and behavior as well as their collective treatment by organizers and newspaper commentators. As shown, however, the increasing involvement of women in science and education could also elicit hostile or humorous responses, but by the turn of the century these anxieties had largely decreased. With scientists having successfully convinced government and the public that they should be accorded a high degree of authority, the status of individual practitioners of science—their class and their character as well as their gender—mattered less. Admitting a woman to the citadel of science could not shake its foundations. Once the male scientist had become a more commonplace and comprehensible object, interest turned to what kind of creature a female scientist might be.⁶⁶ Women at the BAAS could now be the celebrities, worth a portrait in the *Illustrated*

us," is that of Elnor Russell (1878–1965), who accompanied her husband Sir John Russell on the 1924 visit to Canada: Journal of Lady Russell, HERT 11/3/7, fol. 10, Museum of English Rural Life, Reading. On the overseas meetings more generally see Michael Worboys, "The British Association and Empire: Science and Social Imperialism, 1880–1940," in *Parliament of Science*, ed. MacLeod and Collins (cit. n. 1), pp. 170–187.

⁶⁶ Gould, "Femininity and Physical Science in Britain" (cit. n. 16), pp. 67–86, discusses the interest

London News alongside sportswomen, and female journalists were now in a position to write about them as speakers and officers as well as audience members.⁶⁷ It is certainly arguable that the enduring, visible presence of women at BAAS meetings, even as it served to differentiate audience from performers, smoothed the way for women to present papers and take up organizational roles. With a few exceptions, however, these gains were made in the BAAS at the same time as in other scientific societies. It would be wrong to suggest that this was an end to which the earlier female audiences had, collectively, been striving. It is likewise erroneous to suggest that women fought for good seats at the evening lectures as a means of knocking against the closed gates of science.⁶⁸ Most were, rather, seeking to be comfortable during long, hot sessions.

Had the majority of organizers of the BAAS meetings wished to exclude women from the sections they would have done so, as they succeeded in excluding other groups and disciplines.⁶⁹ Women were accepted at BAAS meetings because, as well as helping to swell the association's coffers and audience numbers, they behaved appropriately and helped define the association's purposes. Although the point was not articulated, the organizers may also have sensed that women helped to define the audience as something distinct from the speaker. This is not to deny that there were women at the BAAS meetings throughout this period who aimed to promote their own scientific careers or who strove to better the representation of women within science. We have, rather, tried to highlight the presence and experiences of the majority of women who, like many male associates, did not consider themselves scientifically informed. In doing so, we have exposed a gap in work on science popularization and on women and science. We have emphasized the recorded experiences of members of the audience for science in order to balance their experiences as "consumers" with the more typical focus on the aims and strategies of the "producers" addressing such audiences. We have suggested that many women members of the audience for science viewed themselves as passive recipients of scientific information in which they were frequently uninterested. These findings should give us pause for thought when insisting on the active agency of audiences, even though we would not deny that producers of science could, and did, tailor their work to their view of that audience. This study serves as a counterbalance to literature that portrays women largely as producers and as popularizers of science, fighting against rather than complying with expectations.

We have here tried to explain the prominence of women at BAAS meetings and their representation within descriptions and reports of those meetings. Our argument has been that female audiences helped define the categories of "science" and "the public." If the category of the professional scientist was something that was created in the nineteenth

surrounding Hertha Ayrton as a speaker and experimenter in a number of institutions. She notes the newspapers' "eagerness to discover what a technically-minded woman might look like" (p. 73) and the *Daily Telegraph's* description of a woman speaker at the Institution of Electrical Engineers as a "sensation" (p. 85).

⁶⁷ "The World of Women: Scientists and Other Personalities," *Illustrated London News*, 22 Sept. 1928, p. 512, includes portraits of seven women who read papers at the BAAS meeting in Glasgow. An example of a column aimed at women is S.B., "Women's Affairs: Women and the British Association," *Johannesburg Star*, cutting in George H. Darwin's diary of the BAAS meeting in South Africa, 1905, Add. 8166, fols. 21–22, Cambridge University Library. This emphasized "The Social Side" as of particular interest to women. Cicely Carr wrote an article entitled "Personalities of Science: Eminent Women to Address the British Association" for the *Leicester Daily Mercury*, BAAS Press-cuttings, 1932–1933, BAAS Archives, Dep. BAAS 428, Bodleian Library.

⁶⁸ This is suggested in Phillips, *Scientific Lady* (cit. n. 11), p. 203, which describes Caroline Fox and others as "part of a group that at every meeting sprang into action and demanded places for women."

⁶⁹ Phrenology, e.g., was excluded. See Morrell and Thackray, *Gentlemen of Science*, pp. 276–281; and Cooter, *Cultural Meaning of Popular Science* (cit. n. 5).

century, so too was the category of the public or the audience for science. Still-hazy boundaries can be made to look sharp if the entities to be demarcated are set in opposition and are held to apply without discussion. Usually lacking scientific education, women provided a useful foil to the professionalizing scientific elites, and, in this way, their presence and their representation aided the BAAS in its task of “advancing” science. Women also helped define audiences as passive recipients of information, for popularizers usually seek support for rather than participation in science. Our attention to individual experience complicates the old diffusionist model of popularization, but we have also shown one means by which that model was created. As Cooter and Pumfrey note, scientists appeal to audiences in order to enlist their support, and “when the lay audience accepts the appeal, it allows itself to become . . . part of a network of alliances” that sustains the scientific enterprise. Yet “whilst the scientists have enrolled a public, so too have the public enrolled the scientists.”⁷⁰ That the BAAS signaled celebrity, novelty, and social opportunity as well as support of science to so many ordinary members of the British middle classes demonstrates the success of a strategy that depended on the presence of women to create a sociable milieu within an emerging public science.

⁷⁰ Cooter and Pumfrey, “Separate Spheres and Public Places” (cit. n. 2), p. 250.